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ABSTRACT

Teaching is rarely theory related or experimentally oriented. The same is true of most teacher preparation courses in training institutions. Basically, both types of teaching involve the transmission of received knowledge and the imitation of performers judged to be skilled. The paradox of the uncritical acceptance of existing teaching practice and the skeptical rejection of existing theory could well be resolved by extending the skeptical scrutiny of theory to an equally skeptical scrutiny of practice. By re-appraising the nature of both, teaching in school and college could resemble pedagogical inquiry rather than simply transmission of knowledge. "Theory" may be promulgated and discussed via the various instructional media; however, the ideas, principles, and concepts should be used explicitly to guide practical activities. Teachers in training should see themselves as experimenters testing the validity of the theories they study against their actual teaching practice. Teaching, like research, is a problem solving activity. Both activities should be aimed at discovering new regularities in pedagogy in the form of theoretical principles that will help both teachers and experimenters become more effective. (JD)

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INQUIRY IN TEACHER EDUCATION

EDGAR STONES

Automatic transmission?

In this paper I examine the way in which some practices in the professional element in teacher education could be reconceived as research-like activities. I have, in the past, been somewhat critical of some current practices and have suggested that learning to teach by observing others is essentially conservative, very inefficient and underestimates the complexity of the skills of teaching. (Stones 1978, 1979, Stones and Morris 1972) I have argued that it is far better to attempt to 'Master the teaching model' (Stolurow 1965) by seeking to identify some basic theoretical pedagogical principles and to explore the infinite variety of possibilities for exemplifying and testing them in practical teaching. I would like, here, to examine the relevance of these notions to teacher education.

I am aware that these views are not universally shared. Practising teachers' spokespersons in the teachers' unions and some academics believe that to learn about the theory and the practice of teaching it is necessary to get out into the classrooms and see it as it really is. Many teachers' leaders argue for a greater period of time during training to be spent in the schools and some academics argue that the best way to develop pedagogical theory is to see what teachers do and attempt to fashion a theory from it. Frequently student teachers also reject theory as such on the basis of their experiences of current approaches.

I am not unsympathetic to these views. But I believe that the basis of the scepticism about theory as currently taught in training institutions is in a very interesting way the obverse of the faith in the value of observing practical teaching as a means of acquiring pedagogic skills. On the one hand there is the rejection of theory as such on the basis of the theoretical approaches currently in use and on the other is an acceptance of current practice in teaching as though this will lead to a quintessential body of pedagogical principles. The sceptical view of the former confronts the credulous appraisal of the latter.

I suggest that these ambivalent attitudes are in need of critical scrutiny. My sympathy with the critics of theory in training institutions as it is now is all of a piece with my doubts about teaching as it is now. Both would benefit from an injection of a pedagogical approach that emphasises what I have described as a form of research activity.

I am, of course, aware of my vulnerability in generalising about teaching or teacher training as they are now. However personal contact with generations of teachers on INSET courses together with experience of many hours observing teaching and by records of empirical classroom studies suggest strongly that my generalisation is well founded. Teaching in the main is rarely theory related or experimentally oriented. Much the same can be said about the general run of teacher preparation courses in training institutions. Basically both types of teaching involve the transmission of received knowledge and the imitation of performers adjudged to be skilled.

The paradox of the uncritical acceptance of existing practice of teaching and the sceptical rejection of existing theory could well be resolved by extending the sceptical scrutiny of theory to an equally sceptical scrutiny of practice. By reappraising the nature of both, the possibility would open up for teaching in school and college more to resemble pedagogical inquiry than transmission.

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The transmission mode of treating educational studies is often the conventional gallop through the gurus. (It must be February because we're doing Piaget) Children in such courses are frequently seen as bizarre amalgams of constructs the exact mix of which depends on who is in fashion and which determines the way children learn and their capability for learning. The hypothetical nature of the constructs is all too often forgotten by student and tutor, perhaps not surprisingly in view of the assurance with which they are promulgated by prestigious authors. Few authors have had the grace to take the action Philip Vernon took some thirty years ago when he wrote to the TES warning teachers who had come under his influence as teacher or author that they should not take his theorising about intelligence so mechanically and that there was some hope even for children with low I.Q.s

It is commonly argued that although student-teachers may not see the relevance of theory at the point of transmission, nevertheless they will see its significance in years to come when they have had practical experience. It is also sometimes suggested that provided the transmission is O.K. theory and practice will come together in the students' minds.

I am deeply sceptical of both these points of view. If the transmitters are incapable of making the connexions explicit I fail to see how the receivers are likely to. I believe that the problem is that much theory as it is and as it has been, has avoided pedagogy and until we turn our attention in our courses to its study we are unlikely to make any real advances in our understanding of teaching or in equipping students for their profession.

'Theory', in the transmission mode, generally connotes that information which is dispensed in lectures, seminars or by other media. Practice is the activity one engages in in attempting to get someone to learn something. In the main the twain do not meet in any deliberate structured way. 'Theory' in the approach I favour may be promulgated and discussed via the various instructional media but that is only the beginning. The ideas, the principles, the concepts should then be used quite explicitly to guide practical activities of different kinds but all focussing on helping someone to learn something. The theory, that is, is deliberately pedagogical.

A new model?

I suggest that the most fruitful way forward is to look upon those aspects of teacher education concerned with the theory and practice of teaching as inquiry oriented. Such courses might be viewed as courses in experimental pedagogy. Teachers in training and on INSET would see themselves as experimenters testing the validity of the theories they study against their actual teaching practice. It is this type of activity that seems to me to reasonably regarded as a form of research. I do not think this pretentious because any person who takes an inquiry oriented approach to teaching is out to discover new information. Any increment of knowledge may well be small but it is likely to be genuinely new. This follows since we do not have in any field a definitive prescription for teaching action that will predictably lead to a given outcome, We may approach this happy state in some fields at some levels, but in the main the outcomes of teaching are problematic.

This is not to say that the outcomes of teaching are random, but that such regularities as there are, are gross and not well understood. It is not possible to provide student teachers with algorithms for the teaching situations they will encounter, but we can provide them with heuristic devices that will give them broad guidelines to give them insight into their own teaching/experimenting. These broad guidelines are derived from those findings of research in the foundation disciplines that seem to offer the possibility of real application to practical teaching. The inquiry oriented practice of any teacher, experienced or neophyte, constitutes an investigation of the applicability of these theoretical notions.

I should like to stress that such inquiry is not exact replication even when the same notions are being investigated. This follows from the fact that every teaching/learning encounter is unique so that strictly speaking exact replication is impossible. Thus every lesson holds the potential for making a contribution to our understanding of teaching generally.

The nature of these explorations is quite different from 'teaching method' experiments conducted from time to time. The chimerical quarry of the hunts to capture the best method to teach this that or the other subject is as elusive as the unicorn and is likely to remain so. The naievety of the hunters matches the insubstantial nature of their prey. Global investigation to ascertain the primacy of one end or other of bi-polar constructs such as direct-indirect, formal-informal, or discovery-didactic teaching so grossly understimate the complexity of pedagogical interaction that they inevitably obfuscate more than they illuminate.

What is illuminating is the fact that whenever one looks into the literature about the pedagogy of virtually any subject on the curriculum for enlightenment about theory based, generalisable approaches to its teaching, one almost invariably draws a blank. And yet it would seem logical that any generalisable ideas about pedagogy should be applicable to some aspects of teaching.

Changing gear?

It might seem somewhat perverse in the face of the dearth of systematic knowledge about theory in teaching to advocate an inquiry based teacher training that attempts to prepare teachers to operate heuristically with notions from educational theory in their grappling with the practical realities of teaching. However, I would argue that the suggested approach highlights the distinction between the dispensing model of teaching teaching and the teacher/inquirer model. In our current state of knowledge about teaching theory all contributions are gratefuly received, including any small increments made by students and tutors in addressing everyday problems of learning and teaching how to teach. But even if we had a respectable body of theoretical pedagogical principles the same approach would be appropriate, because it is only by incorporating the theoretical notions into ones own practice that the teacher can test the practical relevance of the theories, and I would argue, only thereby demonstrate full understanding of them.

Despite my caution about the extent of pedagogical understanding, I do believe that there are some generalisations from the foundation disciplines that have potential pedagogical value. The trouble is that little attempt has ever been made deliberately to assimilate them to practical teaching. Some of these notions are currently to be found in some teacher education courses, for example various aspects of learning theory. What is needed is systematic attempts to transform these notions from dicta to be assimilated into hypotheses to be tested. To my mind this can only be done in a course of teacher training where the theory side of the course is integrally connected with the students' practical teaching experience. The two belong together as naturally as laboratory work belongs with theoretical studies in the sciences or field work in geology.

The kind of thing I have in mind is well exemplified by considering the aspect of psychological theory I have already touched on. There is a considerable body of knowledge from experimental psychology about the important aspects of concept learning. We also know that in many fields pupils' grasp of concepts is inaccurate and frequently mistaken. Yet there is little attempt to bring the information about concept learning to bear on the teaching of concepts in school. In view of the fact that most teachers spend most of their time trying to teach concepts, this is, to say the least, unfortunate. If instead of merely

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parading the works of the authorities for students to assimilate, we were to confront them with the challenge of testing the applicability of findings from various studies of concept learning to their practical work in teaching, their understanding of ideas about learning would be less inert and more relevant. We would, in my view, also be laying the foundations for an inquiry oriented body of practitioners that could well enhance our understanding of how learning theories do, in fact, relate to pedagogy.

In inquiry oriented teacher education, student teachers have clearly defined pedagogical objectives: to enhance pupil learning. The knowledge base for the approaches they adopt to achieve this objective will be derived from what they or their tutors perceive as appropriate pedagogical theory. The acid test of the theoretical notions will be the extent to which they actually do enhance pupil growth in different aspects of teaching by different teachers. The experimental conditions may be messy at times and not amenable to conventional respectable research design; but 'natural experiments' by teachers brought up in a traditional of sceptical inquiry aimed at solving real teaching problems and able to evaluate the success of their efforts could well help in the development of theory as well as helping to enhance pupils' learning.

Current more flexible views about what constitutes research, facilitate the development of different approaches. An approach that seems appropriate is that described by Azrin (1977) as outcome oriented and customer directed. The outcomes in our case are student teacher and pupil growth and the customers are the student teachers and the children. The teaching strategy is problem oriented and not method oriented; that is, the approach is not to exemplify this that or the other method, but to deploy whatever elements in various approaches are most likely to promote student and teacher learning.

It is my view that the approach outlined enables teachers and teacher trainers to make informed judgements on the desirable topics for inclusion in teacher education programmes and squares with many of the suggestions made in the recent report of the UCET working party on the PGCE course. (UCET 197) Content is determined by what is clearly relevant to the job of the teacher. Mastery of pedagogical content is only the first step. The analysis and appraisal of actual teaching in the light of theoretical principles is the next, and the final stage is the actual testing of the principles in the students' own teaching. I deliberately avoid using the expression <u>applying the principles</u> since I think it implies an erroneous view of the relationship between theory and practice as well as implying a view of teachers as passive intermediaries instead of active inquirers.

I have written elsewhere in greater detail about this view of various types of learning. (Stones 1979) The argument is that at the simplest level of learning is found the learning of concepts and principles, the 'facts' that are currently the staple of most teaching and indeed, most examinations. Unfortunately even at this level only the words labelling the concepts are taught and tested in many cases. A more complex level of learning demands that one use the body of knowledge one has acquired to analyse and appraise phenomena in the real world. This ensures that more than the words are learned. The most complex kind of learning demands that one make use of these two types of learning actually to operate on the world oneself in the light of the theoretical principles embodied in them. To exemplify from the field of teaching. At the first level student teachers learn the concepts and principles derived from (say) learning theory that seemed applicable to classroom learning. The next stage involves learning to analyse examples of teaching either <u>in vivo</u> or in some recorded form in the light of principles derived from the theory. Finally the most complex learning is learning to apply the principles in one's own practical teaching consciously and with the ability to appraise one's own application

as in the second type of learning. Theory and practice are inseperable in this view. But the theory and practice are not inert and static and external to the students' own experiences, but are part and parcel of his/her own activity and although making use of general principles the specific working out of those principles is idiosyncratic and personal to him since they have been tested in his own unique experiences of teaching.

In the type of experimentation I am considering, although the experiences of each teacher are unique they will inhere in real teaching situations. The teaching will be of various subjects to pupils who are various. If there are any useful regularities of pedagogical activity they will be observable in the various conditions and will offer hope of progress in our understanding of teaching in general and in the understanding of any teacher making the attempt.

It would obviously be utopian to imagine that all teachers or student teachers might be researchers in the currently accepted sense but the conceptualisation of teaching as inquiry instead of transmission is essential to the development of pedagogical theory and practice in teacher education. The paradigm of teaching that calls for the analysis of learning problems, the planning and teaching to bring about learning and the evaluation of the results of teaching fits well with an experimental approach. An essential prerequisite is the familiarisation of student teachers with what knowledge we have, however tentative, about human learning together with some notions about analysis and evaluation of instruction so as to equip them to reflect with insight on their own activities and so enable them to make a personal appraisal of teaching that will inform them and possibly add a little to our store of knowledge about the process.

Teaching like research is a problem solving activity. Both activities should be aimed at descrying new regularities in the form of theoretical principles that will help teachers and experimenters to make more sense of their worlds. In the process of teaching and researching both experimenters and teachers are themselves learners. Advances in understanding of teaching are likely to be the future fruits of the joint learning of teachers and researchers.

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